22nd Asian-Pacific Conference on International Accounting Issues

Gold Coast, Australia. November 7-10, 2010

The Effect of Corporate Governance Regulations on Firm Value: New Zealand Evidence

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General Topic : Corporate Governance

The Effect of Corporate Governance Regulations on Firm Value: New Zealand Evidence

ABSTRACT

Manuscript Type: Empirical

Research Question/Issue: This paper examines the effect that compliance with corporate governance regulations has on the value of New Zealand firms.

Research Findings/Insights: From a sample of 70 New Zealand firms over the period 2000 to 2007, we find that firms that have a high level of compliance with corporate governance regulations have higher value to investors.

Theoretical/Academic Implications: Consistent with agency theory, this paper documents that voluntary compliance with corporate governance regulations and/or guidelines increases the effective monitoring of firm performance. Agency costs associated with the control of managerial discretion are mitigated as a result of this voluntary compliance.

Practitioner/Policy Implications: This study will be of interest to those who set regulations and/or guidelines that aim to promote good corporate governance practice.

Keywords: '*Comply or Explain' Regulation, Corporate Governance, Discretionary Accruals, Tobin's Q, Enterprise Value.*

1. Introduction

This paper contributes to the corporate governance and firm value literature by documenting the association among corporate governance regulation, managerial discretion and firm valuation in New Zealand. Firm value can be defined as an economic measure that reflects the market value of the whole business. It is the aggregate claims of the debt holders, preference stockholders, and common stockholders. Firm value is also a performance measure that compares book and market value. Understanding the effect of corporate governance regulations is important because it effects, inter alia, the opportunistic behaviour of management as well as the decision-making process used by investors. Further, it is posited that investors would prefer a regulated environment because it offers some level of protection to their investments. Prior literature suggests that corporate governance does have a positive impact on firm value as measured by Tobin's Q (Gompers, Ishii, & Metrick, 2003), and the price-to-book ratio.

A consequence of the corporate collapses that occurred in the late 20th and the early 21st centuries is that legal forms of corporate governance, and regulations that can be characterised as a 'comply or explain' type of regulation are commonly found in many countries, The short term and long term affects of these corporate governance 'codes' is not clear, and this paper provides evidence that these types of corporate governance regulations will reduce discretionary actions by management in the short term and will maximise firm value in the long term.

Using a sample of seventy companies that were listed on the New Zealand Stock Exchange (NZX) over the period 2001 to 2007, this study finds evidence consistent with the hypothesis that firms that have a high level of compliance with corporate governance regulations have higher value to investors, i.e. a higher firm value.

Corporate governance is measured based on the 'Corporate Governance Best Practice Code 2003', the 'Principles and Guidelines of Corporate Governance 2004' and the 'Companies Act 1993' indicates better monitoring and internal control systems (*Corporate Governance Best Practice Code*, 2003; Corporate Governance in New Zealand Principles and Guidelines," 2004). One stream of research on corporate governance suggests that governance mechanisms reduce managerial discretionary accruals. Another stream of research documents that implementing corporate governance guidelines/rules leads to an increase in firm performance. This paper employs three different measures of firm value, (Tobin's Q, Market-to-Book ratio and Enterprise Value), and four different discretionary accruals models (Jones model, Modified Jones model, Performance Matched model, and Performance Matched Free Cash Flow model) to establish the effect on firm value.

This remainder of this paper is structured as follows: section two explores the literature on corporate governance and firm value; section three explains the hypotheses and their development; section four explains the research methodology; section five analyses the results; section six provides the conclusions and concluding remarks.

2. Literature Review

The classic argument of agency theory is that the separation of owners and managers leads to information asymmetry between the parties. To control opportunistic behaviour by managers, several external control mechanisms are available, such as externally imposed regulations and the appointment of independent directors. Regulatory agencies impose regulations to mitigate the agency problem, but voluntary mechanisms as typified by the 'comply or explain' nature of corporate governance practices may not be as effective as mandatory regulations. Following this argument, the literature reveals evidence that weak or voluntary regulations may not be sufficiently strong to protect the investment made by, and achieve the objectives of, investors (Farrar, 2005). However, investor protection is reduced in the absence of any

form of regulatory control irrespective to the nature of regulation. Fasterling (2005) argues that investor confidence will also increase when the stock market is regulated, even when compliance with those regulations is voluntary as compared to mandatory. The 'comply or explain' nature of voluntary regulation creates an implicit competition among companies to attract investors in their stock. Companies can convey a positive signal to the public if investors are aware that they have adopted a recognised code of practice regarding corporate governance (Fasterling, 2005). Therefore, better compliance with a code of corporate governance leads to better terms for the investor (Doidge, Karolyi, & Stulz, 2007) which in turn, leads to an environment where investors are willing to pay more than market price for stock in order to achieve a lower risk on investment. However, the literature of corporate governance and firm valuation in respect of voluntary regulation is inconclusive (Anderson & Gupta, 2009).

The regulatory system of an economy has a strong influence on the corporate governance system. A regulated environment ensures relatively more protection for investors (LaPorta, Lopez-de-Silanes, Shleifer, & Vishny, 2000), and firms that operate in better legal regimes rely more on external financing to fund their growth (LaPorta, Florencio, Andrei, & Robert, 1997). Investor protection encourages the development of financial markets since protected investors pay more for securities thereby increasing the attractiveness of securities as an investment (LaPorta et al., 2000). LaPorta et al. (1997) show that countries with protected shareholders have more valuable stock market. Both "insider" shareholders, i.e. minority shareholders and controlling shareholders (La Porta et al., 2000), have significant power with respect to the control mechanisms within the firm. However, the effect of voluntary regulation, especially a 'comply or explain' corporate governance code, arguably leads to better monitoring of management. It is well established that state laws of corporate governance affect firm value(Gompers et al., 2003).

Black, Jang and Kim (2006) prepared a corporate governance index using 515 Korean companies based on a 2001 Korean Stock Exchange survey. They categorised their corporate governance index using five different dimensions and by using ordinary least squares regression analysis, found 47% prediction of corporate governance indices with Tobin's Q as a proxy of firm value and about 160% increase in share price. Gompers et al. (2003) constructed a 'Governance Index' using 24 corporate governance rules as a proxy of shareholders rights for a sample of 1500 large firms. They found that firms in the highest decile of the index with the highest level of managerial power meant weak shareholder rights – these were categorised as being in the 'Dictatorship Portfolio'. Similarly, the strongest shareholder rights were observed to be in firms at the lower deciles of their index – these were categorised as being in the 'Democracy Portfolio'.

Firm performance or firm value (Black et al., 2006; Gompers et al., 2003) is one of the major research stream in regulation of corporate governance and consequences. Black et al. (2006) focused on few dimension of those consequences. *First,* high value firms tend to adopt good governance practices as compared to low value firms. *Second,* firms may endogenously choose different governance practices. *Third,* firms may adopt good governance rules to signal that the firm's insiders will behave, but it is the signal, not the governance practices, that affects share prices. *Finally,* they concerned with omitted variable bias as economic variable may ignore and come in wrong conclusion of corporate governance effects on firm's value.

Firms operating for long signalling business stability and moderate governance practice. Development process of firm improved during the process of operation and firm understood their own strength and weakness (Jovanovic, 1982). However, matured firms have more spread of operation and complexity which increase agency costs. Younger firm have fast growing potentiality rather than older firm (Black et al., 2006). The listing status of firm, which indicates managerial confidence about the future prospects for the firm, also indicates

better monitoring on behalf of shareholders, which is reflected in the stock price. (Sanger & McConnell, 1986). However, a relatively new firm may not have the same impact on investors. Black et al., (2006) evidenced a negative coefficient because younger firms are likely to be fast growing and be intangible asset-intensive.

Regulation and investor protection have been shown to have a positive relationship by many research studies (Black et al., 2006; Gompers et al., 2003; LaPorta et al., 1997; LaPorta et al., 2000). Strong regulations concerning corporate governance tend to result in greater compliance practices by firms. A 'one size fit all' approach to regulation may not suit all the firms in the economy and as the variation increases the legal environment gets less investor friendly (Durnev & Kim, 2005). Consistent with previous research, Durven and Kim (2005) found a positive statistical relationship with governance and disclosure practices related to growth opportunities. Growth firm needs more external financing and concentration to cash flow. Such positive relations are stronger in countries with weak legal framework. Moreover, they argue that good investment opportunities provide more incentives to improve governance practices among firms in countries with a weak legal environment, and finally, the quality of governance and disclosure practices are positively related to firm valuation and this relationship is weaker in a strong legal environment.

3. Hypothesis Development

The question "does good corporate governance practice affect the value of a firm" reflects the consequence of effective corporate governance. In two earlier essays (Black et al., 2006; Gompers et al., 2003), we posit that corporate governance practice was not the only contribution of having regulations. In order to exist, companies must have a minimum level of governance in place, but having regulations provides a safer environment for investors. Following major corporate collapses in late 20th and early 21st centuries, many countries have introduced or enhanced existing regulations and/or guidelines concerning corporate

governance. These will not prevent corporate collapses from occurring in the future, but they should provide a more secure capital market as a result of better systems of corporate governance. Prior studies such as (Durnev & Kim, 2005; LaPorta et al., 2000) provide evidence that an effective system of corporate governance is positively related to investor protection.

A significant number of empirical studies have focused on understanding the relationship between corporate governance and ownership concentration (Davies, Hiller, & McColgan, 2005), board of director independence (Orr, Emanuel, & Wong, 2005), the effectiveness of various board committees, and managerial compensation. The results of these studies have not been conclusive because of differences between countries due to different economic conditions and differing legal environments (Maher & Anderson, 1999). Recent studies have also focussed on the relationship between corporate governance and firm performance. See, for example, (Black et al., 2006; Gompers et al., 2003).

Agency theory posits that managers are motivated to perform better in order to enhance their own position, usually by way of compensation or bonus plans that are based on reported accounting numbers. It is therefore logical to argue that managers may use discretionary accounting policies to manage their earnings in order to meet targeted net income (or some other target) that acts as a threshold to gaining enhanced remuneration. In a competitive and well-structured capital market, investors are well aware that this may be happening, and therefore will factor this into stock market prices (Cornell & Landsman, 2003). We can therefore conclude that stock market prices will be affected when investors are provided with information about discretionary policies used by management.

Previous literature documents that strong and effective systems of internal control will enhance firm value. Chhachharia and Grinstein (2007) demonstrate that corporate governance does have an economic impact on the firm, and conclude, interestingly, that firms that are less compliant with the rules have greater firm value as compared to more compliant firms.

Moreover, they found that board independence and internal control have no effect on small firms but they do for large firms because they experience greater benefits if they comply with the rules. To mitigate the agency problem previously discussed, firms can introduce more effective monitoring of management by having outside directors on the board (Fama & Jensen, 1983). Independent boards have more monitoring power as compared to boards that are dominated by 'insiders'. Outside directors are also likely to enrich the board because they may come from diverse backgrounds and bring different experiences to the boardroom. Orr et al. (2005) shows that the proportion of outsider directors for high growth firms is positively related to firm value. They included tenure of director, directors' equity ownership, outside involvement of directors and proportion of non-executive directors as attributes in their study.

The above discussion suggests that firms with a high proportion of independent directors, appropriate monitoring committees and efficient external auditors will have an effective system of monitoring managerial activity. A high level of monitoring reduces opportunistic behaviour of managers and provides greater confidence to investors, which, in turn, has a positive effect on the value of the firm. Hence, the hypothesis that we test is as follows:

H_0: Companies that comply with corporate governance regulations have greater value than those that don't.

4. Research Methodology

The sample of this study is selected from companies listed in New Zealand Stock Exchange Limited (NZX). New Zealand Stock Market (NZSE) is the main board of NZX where the premium equities are traded. Companies listed on the New Zealand Alternative Market (NZAX) were also included in this study. Specific feature of NZAX market is that companies are typically new, are experiencing rapid growth, and are able to issue shares for low cost. The sample period covers the years 2000 to 2007 inclusive. By the end of 2007 a total of 153

companies were listed by NZX. Companies that were not operating over the entire sample period were excluded as were 29 companies that operated in the financial sector since these are subject to specific regulations and reporting procedures. Thirty five companies did not provide a complete set of financial reports, and the financial information for 19 companies was not available.

The final sample of 70 companies can be classified into sectors using the NZX categories, as follows:

Table – 1

4.1. Measuring Dependent Variables

To investigate the effect of corporate governance regulation compliance and firm value, the following equation (equation 1) is used. Ordinary least squares regression is used for analysis based on balanced panel data which pools the observation cross sectional and overall effect.

$$FV = \varphi_0 + \varphi_1 REGDUMM + \varphi_2 CGI + \varphi_3 DAC + \varphi_4 REGDUMM * CGI * DAC + \varphi_5 CNTLSHR$$

$$+ \varphi_6 NZXLISTTEN + \varphi_7 OPERTEN + \varphi_8 SIZE + \varphi_9 LEVERAGE + \varphi_{10} ROA + \varphi_{11} \sum_{11}^{15} SECTDUMM$$

$$+ \phi \quad \text{.....(1)}$$

Where,

FV= Firm Value (measured in Tobin's Q, Price to Book ration and Enterprise Value)
REGDUMM = Regulation dummy of 1 for corporate governance regulation otherwise 0;
CGI = Corporate Governance Index (comprehensive corporate governance indicator with 20 different items categorized under Board Composition, Board Committee, Auditing and Managerial Ownership & Dual Listing;
DAC = Discretionary Accruals of Net Income Measured with Jones Model (1991), Modified Jones Model (1995), Performance Matched Model (2005) and Performance based Free Cash Flow model;
CNTLSHR = Control Shareholding (Single shareholders holding more than 50% share are coded as 1 and 0 otherwise;
NZXLISTTEN = New Zealand Stock Exchange Listing Tenure;
OPERTEN = Operating tenure of firm;
SIZE = Total Assets as a proxy of business size;
LEVERAGE = Company leverage;
ROA = Return on Assets;
SECTDUMM = Sector Dummy;
ϕ. = Error term.

Firm value can be defined as the economic value of firm which the market forces are ready to pay. Previous literature suggests different measures of firm value, with Tobin's Q and the

market price-to-book ratio being the most common. Theoretically, enterprise value (EV) is also a strong measure of firm value, and this has been considered in this study as well. The following sections discuss these three measures.

Tobin's Q:

The first definition of Firm Value (FV) in this research is as indicated by Tobin's Q formula. Chung and Pruitt (1994) argue that this formula provides a strong prediction of the replacement value of the firm. Tobin's Q is based on the hypothesis that the combined market value of all the companies on the stock market should be equivalent to their replacement costs. It compares total outstanding equity and debt in market value and total assets at book value. Tobin's ratio less than 1 indicates that stock is undervalued, and in this situation firms have little incentive to invest because the value of new capital investment falls below its costs. Conversely, a Tobin Q ratio more than 1 indicates that stock is overvalued and firms would have a strong incentive to invest because the value of new capital investment would exceed costs. Noteworthy research was conducted based on Tobin's Q to predict firm value and found a significant relationship between corporate governance regulation and firm value (Black et al., 2006; Garay & Gonzalez, 2008). Tobin's Q is calculated as follows:

$$Tobin'sQ = \frac{CS + PS + TD}{TA}$$

Where, CS = Common Stock at market value;
PS = Preferred stock at market value;
TD = Total Debt
TA = Total Assets at book value

Price-to-Book ratio (P-B ratio):

The second definition of Firm Value (FV) which is considered relevant to the objectives of this study is the price-to-book ratio (P-B ratio) which compares book value of the firm with the market value. A higher P-B ratio indicates that investors expect management to create more value from a given set of business assets. However, a low P/B ratio may also indicate a good investment opportunity. The P-B ratio may become meaningless for high tech

companies because most of the assets are hidden (intangible) in these types of firms. Some prior research has used the P-B ratio as a measure of firm value (Garay & Gonzalez, 2008; Leal & Carvalhal-da-Silva, 2005). The formula for this ratio is:

$$\text{Price} - \text{Book ratio} = \frac{CS + PS}{Equity}$$

Where, CS = Common Stock at market value;
PS = Preferred stock at market value;

Enterprise Value:

The third definition of firm value used in this study is Enterprise Value (EV). Theoretically, enterprise value is more representative than other measures of firm value because it provides a much more accurate estimate of the value of the firm since it is based on a takeover value. Enterprise Value is calculated as follows:

Enterprise Value = (Market Value of Equity + Market Value of Debt – Cash Holding)

Enterprise values are collected from DataStream (item no # 307). This study investigates the effect that corporate governance regulation has on enterprise value.

Considering the three different variables that measure firm value, the following models are used to satisfy the objectives of this research.

$$Tobin'sQ = \varphi_0 + \varphi_1 REGDUMM + \varphi_2 CGI + \varphi_3 DAC + \varphi_4 REGDUMM * CGI * DAC + \varphi_5 CNTLSHR + \varphi_6 NZXLISTTEN + \varphi_7 OPERTEN + \varphi_8 SIZE + \varphi_9 LEVERAGE + \varphi_{10} ROA + \varphi_{11} \sum_{11}^{15} SECTDUMM + \phi \quad \ldots 1(a)$$

$$\text{Price} - Bookratio = \varphi_0 + \varphi_1 REGDUMM + \varphi_2 CGI + \varphi_3 DAC + \varphi_4 REGDUMM * CGI * DAC + \varphi_5 CNTLSHR + \varphi_6 NZXLISTTEN + \varphi_7 OPERTEN + \varphi_8 SIZE + \varphi_9 LEVERAGE + \varphi_{10} ROA + \varphi_{11} \sum_{11}^{15} SECTDUMM + \phi \quad \ldots 1(b)$$

$$EV = \varphi_0 + \varphi_1 REGDUMM + \varphi_2 CGI + \varphi_3 DAC + \varphi_4 REGDUMM * CGI * DAC + \varphi_5 CNTLSHR + \varphi_6 NZXLISTTEN + \varphi_7 OPERTEN + \varphi_8 SIZE + \varphi_9 LEVERAGE + \varphi_{10} ROA + \varphi_{11} \sum_{11}^{15} SECTDUMM + \phi \quad \ldots 1(c)$$

Where,

REGDUMM = Regulation dummy of 1 for corporate governance regulation otherwise 0;
CGI = Corporate Governance Index (comprehensive corporate governance indicator with 20 different items categorized under Board Composition, Board Committee, Auditing and Managerial Ownership & Dual Listing;
DAC = Discretionary Accruals of Net Income Measured with Jones Model (1991), Modified Jones Model (1995), Performance Matched Model (2005) and Performance based Free Cash Flow model;
CNTLSHR = Control Shareholding (Single shareholders holding more than 50% share are coded as 1 and 0 otherwise;
NZXLISTTEN = New Zealand Stock Exchange Listing Tenure;
OPERTEN = Operating tenure of firm;
SIZE = Total Assets as a proxy of business size;
LEVERAGE = Company leverage;
ROA = Return on Assets;
SECTDUMM = Sector Dummy;
$\phi_{.}$ = Error term.

4.2. Measuring Independent Variables

To measure the effect of firm value following independent variables also considered.

4.2.1 Corporate Governance Index

A corporate governance index was prepared based on Corporate Governance Best Practice Code-2003, Principle and Guidelines of Corporate Governance, Company Act 1993 and the New Zealand Stock Exchange Listing rules. The Total Index was divided into 4 sections with individual components as follows:

Board of Director Score (BoDS):

1. **Number of directors on the board*:*** The median number of directors on the boards of all the companies sampled over the period of the study was calculated to be six and the size of the board for each company was compared to this median. This variable was assigned the value of 1 if the number of directors exceeded the median; otherwise the value is 0.
2. **Independent director in the board:** Principles and Guidelines of Corporate Governance suggest that the board should have an appropriate balance of executive and non-executive directors. Moreover, the NZX listing rules and Code of Practice for Directors (IODNZ, 2009) suggested that majority of directors should be independent and there should be at least two independent non-executive directors. The median proportion of independent directors on the board for all companies in the sample was

calculated to be 0.60. The proportion of independent directors for each company was compared to the median, and this variable was assigned a value of 1 if the proportion of independent directors on the board was greater than the median; otherwise the value is 0.

3. **Board of Director Tenure:** Board of director tenure indicate the combined directorship of all the board members. Recent business environment becoming more complex and top managerial tenure effect on firm performance (Canavan, Jones, & Potter, 2004). Newly appointed manager needs time to adjust with different operating environment and set up strategy aligning with existing goals. So, directors who operating in the same firm for long creates a better coordination in job. Corporate governance regulation mentioned about re-appointment of director but did not specified directors' tenure in the board. The appropriate board tenure was compared to median year value (31 years) of directorship in the firm and the variable was assigned a value of 1 if combined year of all director exceed median, otherwise the value is 0.
4. **Busy Board***:* Principles and Guidelines of Corporate Governance 2004 suggest that the board should allocate time and resources to encourage directors to acquire and retain a sound understanding of their responsibilities. Board members who hold directorship in other firms have less devoted time to particular entity. Corporate governance regulations are silent about specific number of directorship for one individual. Board 'busyness' was measured for all the companies in the sample was calculated to be 24. Total directorship of the board to outside for each company was compared to median and the variable was assigned 0 if the total directorship to outside is greater then median and otherwise the value is 1.
5. **Board Meeting:** Principles and Guidelines of Corporate Governance 2004 states that the board should allocate time and resources to understanding their responsibilities and the implementation of monitoring activities. Corporate governance regulation is

silent to specify the frequency of meetings. Board meeting frequency was measured for all the companies in the sample were calculated to be 8. Board meeting frequency of companies was compared to median and the variable was assigned 1 if the board meeting frequency exceed median and otherwise the value is 0

6. **CEO Duality***:* Principles and Guidelines of Corporate Governance 2004, the NZX listing rules, and Corporate Governance Best Practice Code 2003 all state that one person should not concurrently hold the position of Chief Executive Officer and be the Chair of the board. This variable was assigned a value of 1 if the CEO was NOT the chair of the board, and 0 if both roles were vested in the same person.
7. **CEO experience***:* Principles and Guidelines of Corporate Governance 2004 and Code of Practice for Directors in New Zealand emphasise on importance of CEO for enhancing business performance and monitoring. Change of CEO impact on firm strategy and performance. The effect of CEO was not measurable in short term business operation. Median was calculated (3 years) to measure the effects of CEO experience for all companies in the sample. The CEO experience variable was assigned 1 if the firm have more than median year, otherwise the value is 0.

Board Committee Score (BCS):

1. **Number of Board Committees:** The Corporate Governance Best Practice Code 2003 and the NZX listing rules suggest that there should be sub-committees to deal with matters such as Audit, Remuneration and Nominations to senior positions. Companies having all three committees are coded 1 and 0 otherwise.
2. **Audit Committee Size:** The NZX listing rules and the Principles and Guidelines of Corporate Governance 2004 emphasize the necessity to have an audit committee. That committee must be of such a size to allow it to function effectively and efficiently. The median size of the audit committee was determined for all companies in the sample and the size of the audit committee for each company was compared to the

median so calculated. This variable was assigned a value of 1 if the size of the committee was greater than the median; otherwise the value is 0.

3. **Audit Committee financial expertise:** NZX listing rules and the Corporate Governance in New Zealand Principles and Guidelines 2004 specify that at least one member of the audit committee should have financial expertise. This variable is coded 1 if the company meets this minimum criterion; otherwise the value is 0.
4. **Audit Committee Meeting:** The NZX listing rules and the Corporate Governance in New Zealand Principles and Guidelines 2004 emphasize the need to have an effective audit committee. According to previous research, the frequency of audit committee meetings is an indicator of the effectiveness of audit committee activities (DeAngelo, 1981). The median frequency of audit committee meetings was determined for all companies in the sample and the number of meetings of the audit committee for each company was compared to the median so calculated. This variable was assigned a value of 1 if the frequency of meeting was greater than the median; otherwise the value is 0.
5. **Audit Committee Experience/tenure:** Following similar arguments relating to tenure and CEO experience, it is posited that a committee made up of people who have extensive experience will be more effective in their role as compared to a committee that is less experienced. Experience is measured as the number of years served as a member of the audit committee, i.e. membership-years. The median total membership-years for the current members of the audit committee was determined for all companies in the sample and the total number of membership-years for each company was compared to the median so calculated. This variable was assigned a value of 1 if the audit committee membership-years were greater than the median; otherwise the value is 0.

6. **Chairman Status of Audit Committee:** The Corporate Governance in New Zealand Principles and Guidelines 2004 state that one person should not concurrently be the Chair of the Board and Chair of the Audit Committee. This variable was assigned a value of 1 if the CEO was NOT the chair of the audit committee, and 0 if both roles were vested in the same person
7. **Independent director in audit committee*:*** The NZX listing rules, the Corporate Governance Best Practice Code 2003, and the Corporate Governance in New Zealand Principles and Guidelines 2004, all state that audit committee should be comprised of non executive directors and that independent directors should make up the majority of the audit committee. The median number of independent directors on the audit committee was determined for all companies in the sample and the number of independent directors of the audit committee for each company was compared to the median so calculated. This variable was assigned a value of 1 if the number of independent directors was greater than the median; otherwise the value is 0.
8. **Independent and Executive Director Ratio in Nomination Committee*:*** The Corporate Governance Best Practice Code 2003 and the NZX listing rules state that the majority of the nomination committee should be independent directors. The Nomination committee approach is to select directors, both executive and non-executive, which signals the market that the board is independent (Bostock, 1995). The median number of independent directors on the nomination committee was determined for all companies in the sample and the number of independent directors of the nomination committee for each company was compared to the median so calculated. This variable was assigned a value of 1 if the number of independent directors was greater than the median; otherwise the value is 0.

Audit Score (AS):

1. **Big 4 Audit firm:** The Corporate Governance in New Zealand Principles and Guidelines 2004 emphasizes the need to have a quality external audit process. It is expected that Big 4 audit firms will provide a higher quality audit process and independent audit opinion. This variable is coded 1 if the company is audited by a Big 4 firm; otherwise the value is 0.
2. **Auditor Tenure:** Principles and Guidelines of Corporate Governance 2004 specify that the same auditor should not be appointed for more than five consecutive years. This variable is coded 0 if the company has the same auditor for more than five years; otherwise the value is 1.
3. **Audit fee and Non-audit fee ratio***:* Principles and Guidelines of Corporate Governance 2004 specify that the board should report annually to the shareholders and stakeholders the amount of fees paid to the auditor for audit services and non-audit services, separately. Moreover, non-audit work should not be capped to a specific proportion of all fees paid to an audit firm. Median value for the ratio of audit fees to non-audit fees was determined for all companies in the sample and the ratio for each company was compared to the median so calculated. This variable was assigned a value of 1 if the ratio was less than the median and 0 otherwise.

Ownership and Listing Score (OLS):

1. **Overseas Listing Status:** The NZX listing rules exempt dual listed companies to comply with different clause of listing rules. It is assumed that overseas listing impact positively the quality of complying with corporate governance. The variable was assigned a value of 1 if the company dual listed in that specific year of operation.
2. **Director Shareholdings:** Principles and Guidelines of Corporate Governance 2004 indicate that small holdings of shares held by the directors indicates that they have no other direct or indirect relationship or interest which could reasonably influence the judgement of the board or influence their decision making. The median on proportion

of director shareholding in compare to total outstanding share of the firm for specific year was calculated to be 3.15%. The proportion of director shareholding for each companies was compared to the median and the variable was assigned a value of 0 if the proportion of director shareholding greater than median, otherwise the value is 1.

4.2.2 Discretionary Accruals

The amount of total accruals is the difference between net income and the cash flow from operating activities. Total accruals can be divided into discretionary accruals and non-discretionary accruals. Discretionary accruals arise due to management decisions, and this is used as the independent variable in our model. Discretionary accruals were measured based on the Jones Model (Jones, 1991), the Modified Jones Model (Dechow, Sloan, & Sweeney, 1995), the Performance Matched Model (Kothari, Leone, & Wasley, 2005), and the Performance Matched Free Cash Flow Model (PBFCF model). The total accruals for the PBFCF model is the difference between net incomes and free cash flow where free cash flow is the sum of cash flow from operating activities and cash flow from investing activities (Dechow & Ge, 2006). Discretionary accruals were calculated based on following equations:

Jones Model: $$TA_{it} / A_{it-1} = \alpha_i[\frac{1}{A_{it-1}}] + \beta_{1i}[\frac{\Delta REV_{it}}{A_{it-1}}] + \beta_{2i}[\frac{PPE_{it}}{A_{it-1}}] + \varepsilon_{it}$$

Modified Jones Model: $$NDA_{\tau} = \alpha_1(\frac{1}{A_{t-1}}) + \alpha_2(\frac{\Delta REV_{\tau} - \Delta REC_{\tau}}{A_{t-1}}) + \alpha_3(\frac{PPE_{\tau}}{A_{t-1}})$$

Performance Matched Model: $$\frac{NDA_{ip}}{A_{ip-1}} = \alpha_0 + \alpha_i[\frac{1}{A_{ip-1}}] + \beta_{1i}[\frac{\Delta REV_{ip} - \Delta AR_{ip}}{A_{ip-1}}] + \beta_{2i}[\frac{PPE_{ip}}{A_{ip-1}}] + \delta_1 ROA_{ip-1}$$

Performance Matched Free Cash Flow Model: $$\frac{NDA_{ip}}{A_{ip-1}} = \alpha_0 + \alpha_i[\frac{1}{A_{ip-1}}] + \beta_{1i}[\frac{\Delta REV_{ip} - \Delta AR_{ip}}{A_{ip-1}}] + \beta_{2i}[\frac{PPE_{ip}}{A_{ip-1}}] + \delta_1 ROA_{ip-1}$$

Where, TA = Total Accruals; A = Total Assets; ΔREV = Change of Revenues, PPE = Property Plant and Equipment, NDA = Non discretionary accruals, ΔREC (or ΔAR) = Change of accounts receivables, ROA = Return on Assets, t= time, α = coefficients, β = coefficients.

4.2.3 Control Shareholding

If one entity holds at least half of the issued shares, they are considered to have the control shareholding of the company. Clearly if the controlling shareholder owns less than 100% of the stick, there must be a minority shareholding. The control shareholder has a dominant position on the board and can control board activities, board decisions, and access to information. It is expected that there would be a negative relationship between control shareholding and firm value.

4.2.4 Firm Operating Tenure

The fact that a firm has been operating for a long period of time suggests that the business has experienced stability (in relative terms) and growth. New firms tend to be in a 'high growth' phase whereas older firms tend to have a more stable market capitalization. However, old firms also tend to have relatively old management which introduces delays in the decision making processes (Faleye, 2007). It is expected that there will be a negative relationship between firm operating tenure and firm value.

4.2.5 NZX Listing Tenure

NZX listing tenure is the number of years that the firm has been listed on the New Zealand Stock Exchange. It is expected that there is a positive relationship between long term listing status and investor confidence.

4.3 Control Variable

Following previous studies, e.g. (Black et al., 2006; Gompers et al., 2003) total assets is used as a proxy of firm size. It is expected that a large firm will generate more opportunities to increase the value of that firm because there are more investment opportunities are easier for a large firm as compared to a small firm. Also, a firm with higher leverage will have more monitoring by external parties, which should lead to an increase in firm value. Leverage has also been considered by previous research (Black et al., 2006)

5. Empirical Results

As previously stated, the objective of this study is to measure the effectiveness of corporate governance regulations in New Zealand. Empirical results are presented in descriptive, correlation and regression formats in the following sections.

5.1. Descriptive Analysis

This section presents the descriptive statistics of dependent and all the independent variables except dichotomous variables and sector dummies. The descriptive analysis was conducted on the data before transformation.

Table - 2

Table-2 shows that minimum 25% of corporate governance code compliance for all the firm and maximum 90% of the factor complied. All the discretionary accrual measurement (Jones Model, Modified Jones Model, Performance Based Model and Performance Based Free Cash Flow Model) have lower discretionary accruals i.e. close to zero. An analysis of skewness and kurtosis shows that all the variables are not normally distributed. A method proposed by Cooke (1998) is used to normalize the variables, which is based on the approach used by Van der Waerden (1952, 1953) . The transformation proposed is achieved by dividing the normal distribution into a number of observations plus one segment on the basis that each segment has equal probability. We performed the same transformation for all the variables with due to non-normality problem.

Table – 3

Table 3, shows the descriptive analysis of transformed data. The skewness and kurtosis results in Table 2 indicated that the variables were not normally distributed, but Table 3 shows that the transformed data is normally distributed which enables more predictable power of findings.

5.2. Correlation Analysis

Table 4, shows the correlation matrix for the dependent and independent variables. It shows that corporate governance index and firm value measurements have a statistically positive relationship, indicating that greater compliance with corporate governance codes increases the value of the firm. Discretionary accruals value was taken as an absolute value irrespective of the actual amount of the accrual, and it shows that there is a positive relationship between discretionary accruals and firm value. Control shareholding and firm value shows a consistently negative relationship, implying that companies with controlling shareholders have lower firm value. Regulatory impact on the firm value shows a statistical positive relationship, indicating that the firm value increases after the implementation of corporate governance codes and supportive regulation.

5.3. Regression Analysis

The results of equations 1, 2, and 3 using the measure of all the discretionary accruals are presented in Table 5. All the three definitions of firm value are explained in the discretionary accruals models tested, namely the Jones Model, the Modified Jones Model, the Performance Matched Model and the Free Cash Flow Discretionary Accruals model of discretionary accruals.

Table – 5

Table 5 presents the primary multivariate regression analysis to examine the association between compliance with corporate governance codes and firm value after controlling for a number of possible determinants of such specialization. Three specification and four different models under each specification are presented.

The *first* specification of firm value is based on Tobin's Q. Columns 4 to 11 in Table 5 present the results based on Tobin's Q. These results reveal that firm value is more for the companies that have a high corporate governance index. Specifically, Firms that following

precisely corporate governance regulation is generating more firm value. The result is statistically significant at 1% level. The regulatory impact of corporate governance affects firm value as measured by Tobin's Q, the performance matched model of discretionary accruals (statistically significant at the 10% level) and the performance matched free cash flow model (statistically significant at the 5% level). However, it should be noted that the performance matched free cash flow model of discretionary accruals has a negative effect on Tobin's Q. The interacting coefficient CGI*REGDUMMY*DAC[1] (DAC means in general Jones Model, Modified Jones Model, Performance Matched Model and Performance Matched Free Cash Flow Model) has a negative effect as expected but it is not statistically significant on Tobin's Q specification of firm value. Our results show that although Tobin's Q increased it is not statistically significant with discretionary accruals and regulation, but corporate governance and regulation effects are statistically significant.

The *second* specification of firm value, market-to-book ratio, indicates that regulations have a positive effect in the performance matched free cash flow model with 5% level of significance. The discretionary accruals models also have negative coefficients with market to book value ratio but with statistical significance higher than the 10% level. However, the corporate governance compliance has a positive coefficient at the 1% level of significance. This implies that firms that comply with corporate governance criteria and have better internal control systems have a market value higher than the book value of firm. This specification also supports the proposition that firm value has a positive relationship with corporate governance compliance.

The *third* specification of firm value, enterprise value, shows a stronger effect of the variables as compared to the Tobin's Q and market-to-book ratio models. Regulation has a positive and significant effect on firm (enterprise) value except for the performance matched discretionary

[1] Interacting variable of Corporate Governance index (CGI), Dummy variable of Regulation (REGDUMMY) and Discretionary accruals (DAC) measured by Jones (1991), Modified Jones (1995), Performance Matched Model (Kothari et al., 2005) and Performance Matched Free Cash Flow Model based on Free Cash Flow as determinant of Total Accruals.

accruals model. The corporate governance index coefficient shows statistically significance at the 1% level. This implies that corporate governance compliance leads to greater confidence by stakeholders, which leads to an increase in the value of firm. Theoretically, enterprise value represents a more accurate value as it considers current market value and total debt of firm. Discretionary accruals (Jones, Modified Jones and Performance Matched models) have negative effects on enterprise value. This implies managerial discretionary accruals does affect firm value. More specifically, firm value will decrease if discretionary accruals increase. The Performance Matched Free-Cash-Flow model shows that reducing the discretion of net income leads to an increase in market value (coefficient = -1.25, t-statistics -3.16), and is statistically significant at the 1% level. Enterprise value was found to be much lower for controlling shareholder under performance matched free cash flow model with a 1% level of significance. This implies firm with control shareholding have less effect of corporate governance which ultimately reduces enterprise value. The coefficient of New Zealand Stock Exchange listing tenure (NZXLISTEN) is negative and is statistically significant at the 1% level. This implies firm listed for long time in NZX has lower enterprise value than relatively recent listed status. This result is consistent with the argument that uncertainty contributes to firm value for a young firm (Pastor & Veronesi, 2003). Moreover, it implies that older firms who have established bureaucratic processes over business activities tend to lack flexibility that enables them to rapidly adjust to changing conditions, which can lead to a reduction in market performance as compared to younger firms. (Marshall, 1920).

All the definitions with discretionary accruals have separate measure of regression. Tobin's Q is consistently showed R^2 =28% where as market to book ratio is consistently shows R^2 =8% but Modified Jones model discretionary accruals shows R^2=9%. Finally, enterprise value measure of firm value shows the highest R^2=36% and consistent value across the models. To assess the statistical significance of all the firm value definitions have an *F-stat* which is statistically significant at the 1% level of significance.

6. Conclusions and remarks

Corporate governance research is one of the most researched areas in accounting. However, very few observable inputs are available to evaluate enterprise value as a proxy of firm value based on corporate governance compliance. A sizable body of empirical research has found that firm value is determined by corporate governance compliance and certain firm specific characteristics. This paper expands this stream of research by incorporating enterprise value as a measure of firm value and discretionary accruals calculation using different models as an important explanatory variable. Companies are complying corporate governance practice over the time for regulatory or voluntary purpose because this compliance enhances better internal monitoring system reduces discretionary accruals. Although discretionary accrual has been researched from informational asymmetry and opportunistic behaviour aspects, to the best of our knowledge, this is the first study to document an association between discretionary accruals as a proxy of opportunistic behaviour and firm valuation. This study finds evidence consistent with the proposition that corporate governance compliance reduces management opportunistic behaviour and results in increased firm value because of significant improvements in internal control mechanism due to compliance (Larcker, Richardson, & Irem, 2005). This research can be further extended on management incentive with performance matched free cash flow model.

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Appendix:

Table-1: Sector composition of sample

Sector Group	Companies	Observation	Percentage
Energy	8	64	11.43%
Goods	11	88	15.71%
Investment	5	40	7.14%
Primary	9	72	12.86%
Property	5	40	7.14%
Service	32	256	45.72%
Total	70	560	100%

Table 2: Descriptive Statistics

	Minimum	Maximum	Mean	Std. Deviation	Skewness	Kurtosis
Tonin's Q	0.07	30.88	1.83	2.49	7.18	70.25
Market to Book Value	-1550.98	97.49	-2.32	72.12	-18.65	387.03
Enterprise Value	-1939.00	96312500.00	2935398.41	12524589.28	5.69	31.99
Corporate Governance Index	0.25	0.90	0.54	0.12	0.31	-0.51
Jones Discretionary Accruals	0.00	2.88	0.10	0.19	8.12	98.14
Modified Jones Discretionary Accruals	0.00	2.92	0.10	0.20	8.31	98.93
Performance Matched Discretionary Accruals	0.00	1.76	0.09	0.14	6.54	63.13
Free Cash Flow Discretionary Accruals	0.01	12.24	0.93	1.46	3.54	16.45
Jones_DAC_CGI_REG	0.00	0.55	0.02	0.05	4.60	31.15
Modified Jones _DAC_CGi_REG	0.00	0.55	0.02	0.05	4.67	32.07
Performance Matched DAC_CGI_REG	0.00	0.62	0.02	0.05	5.78	57.48
Free Cash Flow DAC_CGI_REG	0.00	7.49	0.26	0.64	5.27	40.50
NZX Listing Tenure	1.00	49.00	14.32	11.92	1.34	0.84
Operating Tenure	1.00	148.00	30.30	34.35	2.14	3.84
Total Assets	1541.00	37874000.00	1732828.69	6024749.78	5.23	26.99
Leverage	0.00	4.57	0.29	0.33	7.31	80.06
Return On Assets	-4.91	3.91	0.07	0.38	-1.58	83.73

Table 3: Transformed Descriptive analysis

	Minimum	Maximum	Mean	Std. Deviation	Skewness	Kurtosis
Mkt2BK	-2.91	2.91	0.00	0.99	0.00	-0.13
Tobin_Q	-2.91	2.91	0.00	0.99	0.00	-0.13
EV	-2.91	2.79	0.00	0.99	0.00	-0.14
CGI	-2.91	2.79	0.00	0.97	0.03	-0.18
J_DAC_ABS	-2.91	2.91	0.00	0.99	0.00	-0.13
MJ_DAC_ABS	-2.91	2.91	0.00	0.99	0.00	-0.13

PB_DAC_ABS	-2.91	2.91	0.00	0.99	0.00	-0.13
FCF_DAC_ABS	-2.91	2.91	0.00	0.99	0.00	-0.13
J_DAC_CGI_REG	-0.67	2.91	0.06	0.85	0.80	-0.35
MJ_DAC_CGI_REG	-0.67	2.91	0.06	0.85	0.80	-0.35
PB_DAC_CGI_REG	-0.67	2.91	0.06	0.85	0.80	-0.35
FCF_DAC_CGI_REG	-0.67	2.91	0.06	0.85	0.80	-0.35
NZX_ListTEN	-2.14	2.79	0.00	0.98	0.05	-0.25
OPER_TEN	-2.55	2.79	0.00	0.99	0.01	-0.17
TOT_ASS	-2.91	2.79	0.00	0.99	0.00	-0.14
Leverage	-1.93	2.91	0.00	0.98	0.08	-0.31
ROA	-2.91	2.91	0.00	0.99	0.00	-0.13

Table 4: Correlation Matrix

		Mkt2BK	Tobin_Q	EV	CGI	J_DAC_ABS	MJ_DAC_ABS	PB_DAC_ABS	FCF_DAC_ABS	Regulation Dummy	Control Shareholding Code	NZX_ListTEN	OPER_TEN	TOT_ASS	Leverage	ROA	Service Dummy (Standard)	Primary Dummy	Energy Dummy	Goods Dummy	Property Dummy	Investment Dummy
Mkt2BK	Pearson Correlation	1	.403**	0.067	.125**	.088*	.092*	0.059	-0.009	.129**	-0.034	.105*	.090*	-0.07†	-0.074†	0.047	-0.03	-.124**	0.012	.102*	0.041	0.019
	Sig. (2-tailed)		0	0.111	0.003	0.037	0.029	0.164	0.836	0.002	0.423	0.013	0.033	0.087	0.082	0.27	0.479	0.003	0.779	0.016	0.328	0.661
Tobin_Q	Pearson Correlation		1	.164**	0.015	0.057	0.053	0.019	-0.065	0.048	-0.039	-0.056	-.307**	-.226**	.197**	-.096*	0.036	-.279**	-.102*	.327**	-0.036	-0.007
	Sig. (2-tailed)			0	0.715	0.177	0.209	0.646	0.125	0.257	0.353	0.182	0	0	0	0.023	0.4	0	0.016	0	0.391	0.873
EV	Pearson Correlation			1	.475**	0.012	0.005	0.043	0.082†	.099*	-.097*	-0.005	0.058	.897**	.326**	-0.047	.179**	0.005	0.074†	-.250**	-0.03	-0.061
	Sig. (2-tailed)				0	0.775	0.911	0.312	0.052	0.019	0.022	0.906	0.173	0	0	0.265	0	0.9	0.08	0	0.472	0.155
CGI	Pearson Correlation				1	0.043	0.029	0.068	0.047	.142**	0.018	.177**	.306**	.458**	.109*	-.171**	.277**	.123**	-.168**	-.152**	-.095*	-.178**
	Sig. (2-tailed)					0.308	0.496	0.108	0.262	0.001	0.677	0	0	0	0.01	0	0	0.003	0	0	0.025	0
J_DAC_ABS	Pearson Correlation					1	.973**	.578**	.259**	-0.042	-0.005	-0.053	0.037	0.01	0.008	-.100*	0.054	-0.067	0.006	0.018	-0.028	-0.022
	Sig. (2-tailed)						0	0	0	0.323	0.913	0.213	0.388	0.808	0.859	0.018	0.204	0.112	0.892	0.668	0.509	0.609
MJ_DAC_ABS	Pearson Correlation						1	.590**	.255**	-0.044	-0.007	-0.067	0.031	0.009	0.006	-.085*	0.06	-0.063	0.006	0	-0.033	-0.011
	Sig. (2-tailed)							0	0	0.296	0.876	0.115	0.466	0.825	0.881	0.044	0.153	0.137	0.888	0.998	0.435	0.819
PB_DAC_ABS	Pearson Correlation							1	.272**	-0.052	-0.011	-.125**	0.037	0.053	0.021	-.136**	0.023	-0.044	-0.005	0.02	-0.006	-0.004
	Sig. (2-tailed)								0	0.22	0.798	0.003	0.38	0.214	0.62	0.001	0.591	0.3	0.902	0.629	0.893	0.929
FCF_DAC_ABS	Pearson Correlation								1	0.02	0.04	-0.044	.084*	.111**	0.02	-.150**	.141**	-0.078†	-0.001	-0.018	-.100*	-0.046
	Sig. (2-tailed)									0.642	0.342	0.293	0.047	0.009	0.637	0	0.001	0.065	0.986	0.676	0.018	0.28
Regulation Dummy	Pearson Correlation									1	0.028	.285**	.172**	0.07†	0.006	0.051	0	0	0	0	0	0
	Sig. (2-tailed)										0.508	0	0	0.063	0.886	0.232	1	1	1	1	1	1
Control Shareholding Code	Pearson Correlation										1	-.092*	0.025	-0.08†	-.205**	-0.008	.161**	-.104*	.183**	-.089*	-.108*	-.170**
	Sig. (2-tailed)											0.03	0.556	0.055	0	0.857	0	0.014	0	0.036	0.011	0
NZX_ListTEN	Pearson Correlation											1	.413**	0.004	0.015	-0.007	-0.041	-0.016	-0.012	0.022	.086*	-0.002
	Sig. (2-tailed)												0	0.919	0.717	0.861	0.329	0.705	0.779	0.597	0.042	0.958

OPER_TEN	Pearson Correlation												1	.170**	-.177**	-0.063	.130**	.186**	-0.004	-.238**	-0.047	-.105*
	Sig. (2-tailed)													0	0	0.134	0.002	0	0.933	0	0.266	0.013
TOT_ASS	Pearson Correlation													1	.209**	-0.011	.189**	.104*	.102*	-.402**	-0.03	-0.029
	Sig. (2-tailed)														0	0.797	0	0.014	0.016	0	0.476	0.498
Leverage	Pearson Correlation														1	-0.01	.086*	-0.016	0.023	-0.079†	-0.034	-0.027
	Sig. (2-tailed)															0.809	0.042	0.701	0.587	0.061	0.416	0.517
ROA	Pearson Correlation															1	-.182**	.127**	.187**	-.116**	.088*	0.032
	Sig. (2-tailed)																0	0.003	0	0.006	0.036	0.452
Service Dummy (Standard)	Pearson Correlation																1	-.352**	-.330**	-.396**	-.255**	-.255**
	Sig. (2-tailed)																	0	0	0	0	0
Primary Dummy	Pearson Correlation																	1	-.138**	-.166**	-.107*	-.107*
	Sig. (2-tailed)																		0.001	0	0.012	0.012
Energy Dummy	Pearson Correlation																		1	-.155**	-.100*	-.100*
	Sig. (2-tailed)																			0	0.018	0.018
Goods Dummy	Pearson Correlation																			1	-.120**	-.120**
	Sig. (2-tailed)																				0.005	0.005
Property Dummy	Pearson Correlation																				1	-0.077†
	Sig. (2-tailed)																					0.069
Investment Dummy	Pearson Correlation																					1
	Sig. (2-tailed)																					

* Correlation significant at 5% level.
** Correlation Significant at 1% level.
† Correlation significant at 10% level.

Table 5: Regression Analysis Results

Variables	Code	Exp Sign	Definition 1: Tobin's Q								Definition 2: Market to Book Ratio								Definition 3: Enterprise Value							
			Jones		Modified Jones		Performance Matched		Performance Matched FCF		Jones		Modified Jones		Performance Matched		Performance Matched FCF		Jones		Modified Jones		Performance Matched		Performance Matched FCF	
			Coeff	*t-stat*	*Coeff*	*t-stat*	*Coeff*	*t-stat*	*Coeff.*	*t-stat*	*Coeff.*	*t-stat*	*Coeff.*	*t-stat*	*Coeff.*	*t-stat*	*Coeff.*	*t-stat*	*Coeff.*	*t-stat*	*Coeff.*	*t-stat*	*Coeff.*	*t-stat*	*Coeff.*	*t-stat*
Intercept		?	-0.09	-0.79	-0.08	-0.77	-0.10	-0.95	-0.10	-0.99	-0.15	-1.24	-0.15	-1.27	-0.15	-1.21	-0.21	-1.78†	0.10	0.97	0.11	1.11	-0.09	-0.67	-0.04	0.46
Regulation Dummy	REGDUM	+	0.28	1.52	0.27	1.49	0.316	1.74†	0.34	1.86†	0.28	1.35	0.28	1.37	0.28	1.38	0.425	2.05*	0.04	0.22	0.01	0.04	-0.13	-0.58	1.94	1.94†
Corporate Governance Index	CGI	+	0.21	4.37**	0.21	4.38**	0.21	4.40**	0.20	4.34**	0.24	4.58**	0.24	4.61**	0.24	4.57**	0.248	4.71*	0.48	11.98**	0.48	11.92**	0.48	11.97**	0.49	12.39**
Discretionary Accrual – Jones Model	DAC – J	-	0.06	1.22							0.10	1.85†	X	X	X	X	X	X	-0.03	-0.75						
Discretionary Accruals – Modified Jones Model	DAC – MJ	-			0.06	1.24					X	X	0.11	2.02*	X	X	X	X			-0.04	0.97				
Discretionary Accruals – Performance Matched Model	DAC – PM	-					0.03	0.67			X	X	X	X	0.08	1.43	X	X					-0.04	-0.87		
Discretionary Accruals – Performance Matched FCF	DAC – FCF	-							-0.30	-0.61	X	X	X	X	X	X	0.05	0.91							1.37	-1.26
Interaction of Corporate Governance, Regulation and Jones Model Discretionary Accrual	REG*CGI*DAC_J	-	-0.07	-0.63							-0.06	-0.48	X	X	X	X	X	X	0.07	0.65						
Corporate Governance, Regulation and Modified Jones Model Discretionary Accrual	REG*CGI*DAC_MJ	-			-0.07	-0.59					X	X	-0.07	-0.50	X	X	X	X			0.10	0.84				
Corporate Governance, Regulation and Performance Matched Model Discretionary Accrual	REG*CGI*DAC_PM	-					-0.10	-0.88			X	X	X	X	-0.06	-0.50	X	X					0.01	1.24		

Corporate Governance, Regulation and Performance Matched FCF Model Discretionary Accrual	REG*CGI*DAC_FCF	-							-0.12	-1.00	X	X	X	X	X	X	-0.17	1.27							-1.25	-3.16**
Control Shareholding	CNTLSHR	-	-0.06	-0.66	-0.06	-0.66	-0.06	-0.61	-0.06	-0.66	-0.15	-1.50	-0.15	-1.48	-0.15	-1.48	-0.16	1.55	-0.26	-3.13**	-0.26	-3.13**	-0.27	-3.24**	-0.14	-3.16**
NZX Listing Tenure	NXZLISTTEN	-	-0.04	-0.79	-0.03	-0.77	-0.03	-0.77	-0.04	-.98	-0.01	-0.10	-0.01	-0.07	0.01	0.02	-0.01	-0.24	-0.10	-2.56**	-0.10	-2.17**	-0.11	-2.56*	-0.10	-2.40*
Business Operating Tenure	OPERTEN	+/-	-0.22	-4.82**	-0.21	-4.83**	-0.22	-4.74**	-0.21	-4.62**	0.08	1.60	0.08	1.59	0.08	1.58	0.09	1.68†	-0.04	-1.03	-0.04	-1.03	-0.05	-1.08	-0.52	-1.21
Firm Size	TOT_ASS	+/-	-0.23	-5.04**	-0.23	-5.03**	-0.23	-4.98**	-0.23	-4.93**	-0.14	-2.75*	-0.14	-2.74*	-0.14	2.76**	-0.15	-2.83**								
Leverage	LEV	+/-	0.19	4.85**	0.19	4.85**	0.20	4.87**	0.19	4.87**	-0.06	-1.37	-0.06	-1.37	-0.06	-1.38	-0.06	-1.37	.0.23	6.14**	0.23	-6.13**	0.23	6.08**	0.23	6.09**
Return on Assets	ROA	-	-0.02	-0.48	-0.02	-0.49	-0.2	-0.50	-0.03	-0.79	0.10	2.30*	0.10	2.30*	0.10	2.336	0.09	2.09*	-0.01	-0.23	-0.01	0.23	-0.01	-0.33	-0.01	-0.13
Sector Dummy – Primary		?	-0.64	-5.42**	-0.64	-5.24**	-0.65	-5.53**	-0.67	-5.72**	-0.38	-2.86*	-0.36	-2.85*	-0.40	-2.97*	-0.40	-3.01**	-0.20	-0.42*	-0.20	-1.80†	-0.20	1.77†	-0.17	-1.57
Sector Dummy – Energy		?	-0.15	-1.18	-0.15	-1.17	-0.16	-1.23	-0.15	-1.20	0.22	1.57	0.23	1.59	0.216	1.52	0.24	1.65†	0.42	0.18	0.41	3.50**	0.43	3.61**	0.43	3.68**
Sector Dummy – Goods		?	0.48	3.97**	0.48	4.00**	0.48	4.00**	0.47	3.94**	0.28	2.09*	0.29	2.14*	0.278	2.04	0.28	2.06*	-0.46	-0.67	-0.47	-4.30**	-0.47	-4.35**	-0.46	-4.26**
Sector Dummy – Property		?	-0.12	-0.80	-0.12	-0.79	-0.13	-0.84	-0.15	-1.03	0.23	1.35	0.23	1.38	0.212	1.25	0.22	1.29	0.01	-0.28	0.01	0.01	0.01	0.01	0.22	0.22
Sector Dummy - Investment		?	-0.04	-0.24	-0.04	-0.24	-0.04	-0.25	-0.06	-0.41	0.23	1.34	0.23	1.33	0.219	1.27	0.21	1.22	-0.03	-0.31	-0.03	-0.16	-0.03	0.19	-0.21	-0.21
Multiple Correlation Coeff.	*R*		0.54	X	.054	X	0.54		0.55		0.33	X	0.33	X	0.32	X	0.32	X	0.61	X	0.61	X	0.61	X	0.611	X
Adjusted R^2	***R^2***		**.28**	**X**	**0.28**	**X**	**0.28**		**0.28**		**0.08**	**X**	**0.09**	**X**	**0.08**	**X**	**0.08**	**X**	**0.354**	**X**	**0.356**	**X**	**0.36**	**X**	**0.36**	**X**
F-Statistics	**F-Stat**		**15.18****	**X**	**15.19****	**X**	**15.11****		**15.39****		**4.41****	**X**	**4.48****	**X**	**4.27****	**X**	**4.22****	**X**	**22.85****	**X**	**22.91****	**X**	**22.97****	**X**	**23.20**	**X**
Durbin-Watson Stat.			2.02	X	2.02	X	2.02		2.00		2.04	X	2.04	X	2.03	X	2.02	X	1.86	x	1.85	X	1.85	X	1.85	X
Observation	560	560	560	560	560	560	560	560	560	560	560	560	560	560	560	560	560	560	560	560	560	560	560	560	560	560

* Correlation significant at 5% level.
** Correlation Significant at 1% level.
† Correlation significant at 10% level